

## DISPLACEMENT ON DEMAND WITH REGENERATIVE BRAKING

### ABSTRACT OF THE DISCLOSURE

A regenerative braking system for a vehicle includes a displacement on demand (DOD) engine having cylinders, a battery, and an electric machine having motor and generator modes. The  
5 electric machine is selectively driven by a wheel of the vehicle. A controller detects a braking condition of the vehicle and deactivates at least one of the cylinders in response to the braking condition. The controller operates the electric machine in the generator mode during the braking condition to charge the battery.